## CLAIMS

What is claimed is:

1. A machine-accessible medium that provides instructions, which when executed by a computing platform, cause said computing platform to perform operations comprising a method of:

obtaining a first circuit layout design;

obtaining a second circuit layout design;

generating a first topology graph for said first circuit layout design;

generating a second topology graph for said second circuit layout design;

comparing said first topology graph and said second topology graph to obtain a comparison result; and

reporting said comparison result.

2. A machine-accessible medium as in claim 1, wherein said first topology graph comprises a plurality of first topology graph nodes and a plurality of first topology graph lines, and wherein said second topology graph comprises a plurality of second topology graph nodes and a plurality of second topology graph lines.

3. A machine-accessible medium as in claim 2, wherein each first topology graph node comprises a data structure identifying at least one selected from the group consisting of: a node type for the first topology graph node, a node function for the first topology graph node, a node

location for the first topology graph node, first topology graph lines connected to the first topology graph node, and at least one layer for the first topology graph,

wherein each first topology graph line comprises a data structure identifying at least one selected from the group consisting of: a line type for the first topology graph line, a line location for the first topology graph line, a head node for the first topology graph line, a tail node for the first topology graph line, a layer for the first topology graph line, a line length for the first topology graph line, and a line width for the first topology graph line,

wherein each second topology graph node comprises a data structure identifying at least one selected from the group consisting of: a node type for the second topology graph node, a node function for the second topology graph node, a node location for the second topology graph node, second topology graph lines connected to the second topology graph node, and at least one layer for the second topology graph, and

wherein each second topology graph line comprises a data structure identifying at least one selected from the group consisting of: a line type for the second topology graph line, a line location for the second topology graph line, a head node for the second topology graph line, a tail node for the second topology graph line, a layer for the second topology graph line, a line length for the second topology graph line, and a line width for the second topology graph line.

4. A machine-accessible medium as in claim 1, wherein said comparing comprises determining a best matching topology graph node pair from said first topology graph and said second topology graph.

5. A machine-accessible medium as in claim 4, wherein said determining said best matching topology graph node pair comprises:

selecting a first topology graph node from said first topology graph and a second topology graph node from said second topology graph to obtain a topology graph node pair;

comparing at least one attribute for said first topology graph node to at least one attribute of said second topology graph node to obtain a confidence level for said topology graph node pair;

comparing said confidence level for said topology graph node pair to a confidence threshold;

if said confidence level for said topology graph node pair exceeds said confidence threshold, identifying said topology graph node pair as a matching topology graph node pair and comparing said confidence level for said topology graph node pair to a best confidence level; and

if said confidence level for said topology graph node pair exceeds said best confidence level, setting a best matching topology graph node pair to said matching topology graph node pair and setting said best confidence level to said confidence level.

6. A machine-accessible medium as in claim 4, wherein said comparing further comprises determining an additional matching topology graph node pair from said first topology graph and said second topology graph based on traversing said first and second topology graphs from said best matching topology graph node pair.

7. A machine-accessible medium as in claim 6, wherein said determining said additional matching topology graph node pair comprises:

selecting a first topology graph node from said first topology graph connected to a first topology graph node of said best matching topology graph node pair to obtain a selected first topology graph node;

selecting a second topology graph node from said second topology graph connected to a second topology graph node of said best matching topology graph node pair to obtain a selected second topology graph node;

comparing at least one attribute for said selected first topology graph node to at least one attribute of said selected second topology graph node to obtain a confidence level;

comparing said confidence level to a confidence threshold;

if said confidence level said topology graph node pair exceeds said confidence threshold, identifying said selected first topology graph node and said selected second topology graph node as said additional matching topology graph node pair.

8. A machine-accessible medium as in claim 1, wherein said comparison result comprises at least a first matched topology graph node pair and a second matched topology graph node pair connected via a topology graph line pair, said topology graph line pair having a pair of lengths and a pair of widths, wherein said method further comprises:

comparing said pair of lengths to a length sensitivity parameter; and

comparing said pair of widths to a width sensitivity parameter.

9. A machine-accessible medium as in claim 1, wherein said comparison result comprises unmatched topology graph nodes, unmatched line lengths, and unmatched line widths

from said first topology graph, and unmatched topology graph nodes, unmatched line lengths, and unmatched line widths from said second topology graph.

10. A method comprising:

obtaining a first circuit layout design;

obtaining a second circuit layout design;

generating a first topology graph for said first circuit layout design;

generating a second topology graph for said second circuit layout design;

comparing said first topology graph and said second topology graph to obtain a comparison result; and

reporting said comparison result.

11. A method as in claim 10, wherein said first topology graph comprises a plurality of first topology graph nodes and a plurality of first topology graph lines, and wherein said second topology graph comprises a plurality of second topology graph nodes and a plurality of second topology graph lines.

12. A method as in claim 11, wherein each first topology graph node comprises a data structure identifying at least one selected from the group consisting of: a node type for the first topology graph node, a node function for the first topology graph node, a node location for the first topology graph node, first topology graph lines connected to the first topology graph node, and at least one layer for the first topology graph,

wherein each first topology graph line comprises a data structure identifying at least one selected from the group consisting of: a line type for the first topology graph line, a line location for the first topology graph line, a head node for the first topology graph line, a tail node for the first topology graph line, a layer for the first topology graph line, a line length for the first topology graph line, and a line width for the first topology graph line,

wherein each second topology graph node comprises a data structure identifying at least one selected from the group consisting of: a node type for the second topology graph node, a node function for the second topology graph node, a node location for the second topology graph node, second topology graph lines connected to the second topology graph node, and at least one layer for the second topology graph, and

wherein each second topology graph line comprises a data structure identifying at least one selected from the group consisting of: a line type for the second topology graph line, a line location for the second topology graph line, a head node for the second topology graph line, a tail node for the second topology graph line, a layer for the second topology graph line, a line length for the second topology graph line, and a line width for the second topology graph line.

13. A method as in claim 10, wherein said comparing comprises determining a best matching topology graph node pair from said first topology graph and said second topology graph.

14. A method as in claim 13, wherein said determining said best matching topology graph node pair comprises:

selecting a first topology graph node from said first topology graph and a second topology graph node from said second topology graph to obtain a topology graph node pair;

comparing at least one attribute for said first topology graph node to at least one attribute of said second topology graph node to obtain a confidence level for said topology graph node pair;

comparing said confidence level for said topology graph node pair to a confidence threshold;

if said confidence level for said topology graph node pair exceeds said confidence threshold, identifying said topology graph node pair as a matching topology graph node pair and comparing said confidence level for said topology graph node pair to a best confidence level; and

if said confidence level for said topology graph node pair exceeds said best confidence level, setting a best matching topology graph node pair to said matching topology graph node pair and setting said best confidence level to said confidence level.

15. A method as in claim 13, wherein said comparing further comprises determining an additional matching topology graph node pair from said first topology graph and said second topology graph based on traversing said first and second topology graphs from said best matching topology graph node pair.

16. A method as in claim 15, wherein said determining said additional matching topology graph node pair comprises:

selecting a first topology graph node from said first topology graph connected to a first topology graph node of said best matching topology graph node pair to obtain a selected first topology graph node;

selecting a second topology graph node from said second topology graph connected to a second topology graph node of said best matching topology graph node pair to obtain a selected second topology graph node;

comparing at least one attribute for said selected first topology graph node to at least one attribute of said selected second topology graph node to obtain a confidence level;

comparing said confidence level to a confidence threshold;

if said confidence level said topology graph node pair exceeds said confidence threshold, identifying said selected first topology graph node and said selected second topology graph node as said additional matching topology graph node pair.

17. A method as in claim 10, wherein said comparison result comprises at least a first matched topology graph node pair and a second matched topology graph node pair connected via a topology graph line pair, said topology graph line pair having a pair of lengths and a pair of widths, wherein said method further comprises:

comparing said pair of lengths to a length sensitivity parameter; and

comparing said pair of widths to a width sensitivity parameter.

18. A method as in claim 10, wherein said comparison result comprises unmatched topology graph nodes, unmatched line lengths, and unmatched line widths from said first

topology graph, and unmatched topology graph nodes, unmatched line lengths, and unmatched line widths from said second topology graph.

19. An apparatus comprising at least one processor and at least one machine-accessible medium coupled to said at least one processor, said at least one processor adapted to perform operations comprising a method of:

obtaining a first circuit layout design;

obtaining a second circuit layout design;

generating a first topology graph for said first circuit layout design;

generating a second topology graph for said second circuit layout design;

comparing said first topology graph and said second topology graph to obtain a comparison result; and

reporting said comparison result.

20. An apparatus as in claim 19, wherein said first topology graph comprises a plurality of first topology graph nodes and a plurality of first topology graph lines, and wherein said second topology graph comprises a plurality of second topology graph nodes and a plurality of second topology graph lines.

21. An apparatus as in claim 20, wherein each first topology graph node comprises a data structure identifying at least one selected from the group consisting of: a node type for the first topology graph node, a node function for the first topology graph node, a node location for the

first topology graph node, first topology graph lines connected to the first topology graph node, and at least one layer for the first topology graph,

wherein each first topology graph line comprises a data structure identifying at least one selected from the group consisting of: a line type for the first topology graph line, a line location for the first topology graph line, a head node for the first topology graph line, a tail node for the first topology graph line, a layer for the first topology graph line, a line length for the first topology graph line, and a line width for the first topology graph line,

wherein each second topology graph node comprises a data structure identifying at least one selected from the group consisting of: a node type for the second topology graph node, a node function for the second topology graph node, a node location for the second topology graph node, second topology graph lines connected to the second topology graph node, and at least one layer for the second topology graph, and

wherein each second topology graph line comprises a data structure identifying at least one selected from the group consisting of: a line type for the second topology graph line, a line location for the second topology graph line, a head node for the second topology graph line, a tail node for the second topology graph line, a layer for the second topology graph line, a line length for the second topology graph line, and a line width for the second topology graph line.

22. An apparatus as in claim 19, wherein said comparing comprises determining a best matching topology graph node pair from said first topology graph and said second topology graph.

23. An apparatus as in claim 22, wherein said determining said best matching topology graph node pair comprises:

selecting a first topology graph node from said first topology graph and a second topology graph node from said second topology graph to obtain a topology graph node pair;

comparing at least one attribute for said first topology graph node to at least one attribute of said second topology graph node to obtain a confidence level for said topology graph node pair;

comparing said confidence level for said topology graph node pair to a confidence threshold;

if said confidence level for said topology graph node pair exceeds said confidence threshold, identifying said topology graph node pair as a matching topology graph node pair and comparing said confidence level for said topology graph node pair to a best confidence level; and

if said confidence level for said topology graph node pair exceeds said best confidence level, setting a best matching topology graph node pair to said matching topology graph node pair and setting said best confidence level to said confidence level.

24. An apparatus as in claim 22, wherein said comparing further comprises determining an additional matching topology graph node pair from said first topology graph and said second topology graph based on traversing said first and second topology graphs from said best matching topology graph node pair.

25. An apparatus as in claim 24, wherein said determining said additional matching topology graph node pair comprises:

selecting a first topology graph node from said first topology graph connected to a first topology graph node of said best matching topology graph node pair to obtain a selected first topology graph node;

selecting a second topology graph node from said second topology graph connected to a second topology graph node of said best matching topology graph node pair to obtain a selected second topology graph node;

comparing at least one attribute for said selected first topology graph node to at least one attribute of said selected second topology graph node to obtain a confidence level;

comparing said confidence level to a confidence threshold;

if said confidence level said topology graph node pair exceeds said confidence threshold, identifying said selected first topology graph node and said selected second topology graph node as said additional matching topology graph node pair.

26. An apparatus as in claim 19, wherein said comparison result comprises at least a first matched topology graph node pair and a second matched topology graph node pair connected via a topology graph line pair, said topology graph line pair having a pair of lengths and a pair of widths, wherein said method further comprises:

comparing said pair of lengths to a length sensitivity parameter; and

comparing said pair of widths to a width sensitivity parameter.

27. An apparatus as in claim 19, wherein said comparison result comprises unmatched topology graph nodes, unmatched line lengths, and unmatched line widths from said first

topology graph, and unmatched topology graph nodes, unmatched line lengths, and unmatched line widths from said second topology graph.

28. An apparatus comprising:

a topology graph generator to produce a first topology graph from a first circuit layout design and to produce a second topology graph from a second circuit layout design; and

a comparator coupled to said topology graph generator, said comparator to receive said first topology graph and said second topology graph from said topology graph generator, said comparator to compare said first topology graph and said second topology graph to obtain a comparison result.

29. An apparatus as in claim 28, wherein said first topology graph comprises a plurality of first topology graph nodes and a plurality of first topology graph lines, and wherein said second topology graph comprises a plurality of second topology graph nodes and a plurality of second topology graph lines.

30. An apparatus as in claim 29, wherein each first topology graph node comprises a data structure identifying at least one selected from the group consisting of: a node type for the first topology graph node, a node function for the first topology graph node, a node location for the first topology graph node, first topology graph lines connected to the first topology graph node, and at least one layer for the first topology graph,

wherein each first topology graph line comprises a data structure identifying at least one selected from the group consisting of: a line type for the first topology graph line, a line location

for the first topology graph line, a head node for the first topology graph line, a tail node for the first topology graph line, a layer for the first topology graph line, a line length for the first topology graph line, and a line width for the first topology graph line,

wherein each second topology graph node comprises a data structure identifying at least one selected from the group consisting of: a node type for the second topology graph node, a node function for the second topology graph node, a node location for the second topology graph node, second topology graph lines connected to the second topology graph node, and at least one layer for the second topology graph, and

wherein each second topology graph line comprises a data structure identifying at least one selected from the group consisting of: a line type for the second topology graph line, a line location for the second topology graph line, a head node for the second topology graph line, a tail node for the second topology graph line, a layer for the second topology graph line, a line length for the second topology graph line, and a line width for the second topology graph line.

31. An apparatus as in claim 28, wherein said comparator determines a best matching topology graph node pair from said first topology graph and said second topology graph.

32. An apparatus as in claim 31, wherein to determine said best matching topology graph node pair, said comparator:

selects a first topology graph node from said first topology graph and a second topology graph node from said second topology graph to obtain a topology graph node pair;

compares at least one attribute for said first topology graph node to at least one attribute of said second topology graph node to obtain a confidence level for said topology graph node pair;

compares said confidence level for said topology graph node pair to a confidence threshold;

if said confidence level for said topology graph node pair exceeds said confidence threshold, identifies said topology graph node pair as a matching topology graph node pair and comparing said confidence level for said topology graph node pair to a best confidence level; and

if said confidence level for said topology graph node pair exceeds said best confidence level, sets a best matching topology graph node pair to said matching topology graph node pair and setting said best confidence level to said confidence level.

33. An apparatus as in claim 31, wherein said comparator further determines an additional matching topology graph node pair from said first topology graph and said second topology graph based on traversing said first and second topology graphs from said best matching topology graph node pair.

34. An apparatus as in claim 33, wherein to determine said additional matching topology graph node pair, said comparator:

selects a first topology graph node from said first topology graph connected to a first topology graph node of said best matching topology graph node pair to obtain a selected first topology graph node;

selects a second topology graph node from said second topology graph connected to a second topology graph node of said best matching topology graph node pair to obtain a selected second topology graph node;

compares at least one attribute for said selected first topology graph node to at least one attribute of said selected second topology graph node to obtain a confidence level;

compares said confidence level to a confidence threshold;

if said confidence level said topology graph node pair exceeds said confidence threshold, identifies said selected first topology graph node and said selected second topology graph node as said additional matching topology graph node pair.

35. An apparatus as in claim 28, wherein said comparison result comprises at least a first matched topology graph node pair and a second matched topology graph node pair connected via a topology graph line pair, said topology graph line pair having a pair of lengths and a pair of widths, wherein said comparator further:

compares said pair of lengths to a length sensitivity parameter; and

compares said pair of widths to a width sensitivity parameter.

36. An apparatus as in claim 28, wherein said comparison result comprises unmatched topology graph nodes, unmatched line lengths, and unmatched line widths from said first topology graph, and unmatched topology graph nodes, unmatched line lengths, and unmatched line widths from said second topology graph.